

THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

1. (PREVIOUSLY PRESENTED) An optical disc comprising:
 - a substrate having flat portions, which correspond to tracks having a width, and micro-embossments, which are track guides, protruding from surfaces of the flat portions;
 - a reflective layer formed on the surfaces of the flat portions and the micro-embossments of the substrate;
 - a dielectric layer formed on the reflective layer;
 - a recording layer formed on the dielectric layer and having portions corresponding to the flat portions; and
 - a protective layer formed on the recording layer,wherein the micro-embossments protrude toward the protective layer and narrow in a direction toward the protective layer.
2. (ORIGINAL) The optical disc of claim 1, wherein said micro-embossments are hills of a peaked hood shape, respectively.
3. (PREVIOUSLY PRESENTED) The optical disc of claim 2, wherein said hills of a respectively peaked hood shape each have a height of $\lambda/4$ from the surfaces of the flat portions, in which λ is a wavelength of light compatible with the optical disc.
4. (ORIGINAL) The optical disc of claim 1, wherein a surface of said protective layer opposite that formed on the recording layer is flat.
5. (PREVIOUSLY PRESENTED) The optical disc of claim 2, wherein said protective layer has an outer surface higher than peaks of the hills.
6. (ORIGINAL) The optical disc of claim 5, wherein said protective layer is transparent.

7. (PREVIOUSLY PRESENTED) The optical disc of claim 1, wherein said substrate has a first side having the flat portions and the micro-embossments, said substrate further comprising a second side opposite and substantially parallel to the first side and having second flat portions and second micro-embossments, which are track guides, protruding from surfaces of the second flat portions, the optical disc further comprising:

- a second reflective layer formed on the surfaces of the second flat portions and the second micro-embossments of the second side of the substrate;
- a second dielectric layer formed on the second reflective layer;
- a second recording layer formed on the second dielectric layer; and
- a second protective layer formed on the second recording layer,

wherein the second micro-embossments protrude toward the second protective layer.

8. (ORIGINAL) The optical disc of claim 7, wherein said micro-embossments and the second micro-embossments are hills of the peaked hood shape, respectively,

9. (ORIGINAL) The optical disc of claim 8, wherein the hills of a respectively peaked hood shape have a height of λ is a wavelength of light compatible with the optical disc.

10. (ORIGINAL) The optical disc of claim 7, wherein outer surfaces of the protective layer and the second protective layer extend further from the substrate than peaks of the hills.

11. (ORIGINAL) The optical disc of claim 3, wherein a thickness of said protective layer is thicker than those of said micro-embossments.

12. (PREVIOUSLY PRESENTED) An optical disc comprising:
a substrate having a first surface, which corresponds to a track having a width, with first protrusions extending from the first surface, and covered by a protective layer, wherein the first protrusions are track guides for data recorded on the track and narrow toward the protective layer.

13. (ORIGINAL) The optical disc of claim 12, wherein the first surface has first flat portions between the first protrusions.

14. (ORIGINAL) The optical disc of claim 13, wherein the first protrusion are hills of a respectively peaked hood shape.

15. (ORIGINAL) The optical disc of claim 14, wherein each hill has a height of $\lambda/4$ extending from the first flat portions, wherein λ is a wavelength of light to record and/or reproduce the data from the optical disc.

16. (ORIGINAL) The optical disc of claim 12, further comprising:
a first reflective layer formed on the first surface and the first protrusions;
a first dielectric layer formed on the first reflective layer;
a first recording layer formed on the first dielectric layer; and
a first protective layer formed on the first recording layer.

17. (ORIGINAL) The optical disc of claim 16, wherein the first protective layer is formed further from the first surface than peaks of the first protrusions.

18. (ORIGINAL) The optical disc of claim 17, wherein the first protective layer has a flat outer surface.

19. (ORIGINAL) The optical disc of claim 17, wherein the recording layer has grooves corresponding to and above the protrusions, wherein the grooves have a depth substantially as a height of the protrusions.

20. (ORIGINAL) The optical disc of claim 15, further comprising:
a reflective layer formed on the first surface and the protrusions;
a dielectric layer formed on the reflective layer;
a recording layer formed on the dielectric layer; and
a protective layer formed on the recording layer.

21. (ORIGINAL) The optical disc of claim 19, wherein the protective layer is formed further from the first surface than the peaks of the protrusions.

22. (ORIGINAL) The optical disc of claim 12, further comprising:
the substrate having a second surface opposite to and substantially parallel to the first

surface with second protrusions extending from the second surface.

23. (ORIGINAL) The optical disc of claim 15, further comprising:

the substrate having a second surface opposite to and substantially parallel to the first surface with second protrusions extending from the second surface, the second surface having second flat portions between the second protrusions;

wherein the second protrusions are hills of a respectively peaked hood shape, each hill having a height of $\lambda/4$ extending from the second flat portions.

24. (PREVIOUSLY PRESENTED) The optical disc of claim 16, further comprising:

the substrate having a second surface opposite to and substantially parallel to the first surface with second protrusions extending from the second surface;

a second reflective layer formed on the second surface and the second protrusions;

a second dielectric layer formed on the second reflective layer;

a second recording layer formed on the second dielectric layer; and

a second protective layer formed on the second recording layer.

25. (ORIGINAL) The optical disc of claim 24, wherein the first protective layer is

formed further from the first surface than peaks of the first protrusions.

26. (ORIGINAL) The optical disc of claim 24, wherein the first protective layer has a

flat outer surface.

27. (PREVIOUSLY PRESENTED) An optical disc which stores data, comprising:

a substrate covered by a protective layer, and having a first surface, which corresponds to a track having a width; and

first protrusions extending from the first surface, wherein the first protrusions are track guides for the data and narrow in a direction toward the protective layer.

28. (ORIGINAL) The optical disc of claim 27, wherein the first protrusions are

integrally formed of the substrate.

29. (ORIGINAL) The optical disc of claim 27, wherein the substrate has a second

surface opposite and substantially parallel to the first surface, the optical disc further comprising

second protrusions extending from the second surface, wherein the second protrusions are track guides for the data.

30. (ORIGINAL) The optical disc of claim 28, wherein the substrate has a second surface opposite and substantially parallel to the first surface, the optical disc further comprising second protrusions extending from the second surface, wherein the second protrusions are track guides for the data and are integrally formed of the substrate.

31. (ORIGINAL) A method of forming an optical disc which stores data, comprising:
stamping a substrate to have first protrusions extending from a first surface of the substrate, wherein the first protrusions are track guides for the data.

32. (ORIGINAL) The method of claim 31, further comprising:
forming a first reflective layer on the first surface and the first protrusions;
forming a first dielectric layer on the first reflective layer;
forming a first recording layer on the first dielectric layer; and
forming a first protective layer on the first recording layer.

33. (ORIGINAL) The method of claim 32, wherein the first protective layer is further from the first surface than peaks of the first protrusions.

34. (ORIGINAL) The method of claim 31, further comprising:
stamping the substrate to have second protrusions extending from a second surface of the substrate, wherein the second protrusions are track guides for the data.

35. (ORIGINAL) The method of claim 32, further comprising:
stamping the substrate to have second protrusions extending from a second surface of the substrate, wherein the second protrusions are track guides for the data;
forming a second reflective layer on the second surface and the second protrusions;
forming a second dielectric layer on the second reflective layer;
forming a second recording layer on the second dielectric layer; and
forming a second protective layer on the second recording layer.

36. (ORIGINAL) The method of claim 35, wherein the second protective layer is

further from the second surface than peaks of the second protrusions.

37. (ORIGINAL) A method of recording data on an optical disc including a substrate having a surface with protrusions extending from the surface, wherein the protrusions are track guides for the data, a reflective layer formed on the surface and the protrusions, a dielectric layer formed on the reflective layer, a recording layer formed on the dielectric layer, and a protective layer formed on the recording layer, the method comprising:

moving an objective lens of a flying head to a distance of $\lambda/10$ to $\lambda/5$ from the protective layer; and

forming an optical spot at a bottom of the objective lens to generate a near field, thereby recording the data on the recording layer based upon the protrusions.

38. (ORIGINAL) A method of reproducing data from an optical disc including a substrate having a surface with protrusions extending from the surface, wherein the protrusions are track guides for the data, a reflective layer formed on the surface and the protrusions, a dielectric layer formed on the reflective layer, a recording layer formed on the dielectric layer and storing the data, and a protective layer formed on the recording layer, the method comprising:

moving an objective lens of a flying head to a distance of $\lambda/10$ to $\lambda/5$ from the protective layer; and

forming an optical spot at a bottom of the objective lens to generate a near field; and

reflecting the optical spot from the reflective layer after passing through the recording layer, using the protrusions, to reproduce the data.